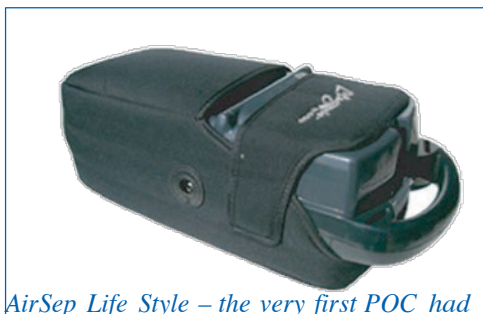


This article reprinted courtesy of The Pulmonary Paper.

Find out the Facts before Choosing a Portable Oxygen Concentrator:

The Pulmonary Paper's Annual POC Review

Portable oxygen concentrators (POCs) are still a relatively new addition to the family of home oxygen therapy equipment. The first modern small-form POC was released in the early 2000s – AirSep's LifeStyle was a 10-pound, pulse-only device with a rechargeable battery that allowed its user to carry the unit with them wherever they went. It was 2005 before the first continuous flow-capable POC hit the market. SeQual's first generation Eclipse weighed nearly twice that of the LifeStyle, but had over triple the oxygen production capacity, giving a wide range of oxygen users the option of a portable unit that could meet most of their needs.



AirSep Life Style – the very first POC had a battery that lasted for 45 minutes.

After that, the POC market quickly expanded. From 2006 to 2011 no less than 15 different POCs were released, each one bringing its own unique performance capabilities and characteristics. This wasn't a bad thing, but the flood of new products and their varying abilities has created a market where confusion exists over which POCs are "right" for someone. Some units weigh less than five pounds, but they also do not manufacture much oxygen. Other units are able to make quite a bit of oxygen, but they weigh anywhere from 10 to

18 pounds – and that's before adding the weight of the battery and cart. Some units have continuous flow ability, others don't. And while all POCs feature pulse settings, the volumes delivered by each POC at a given setting wildly vary. For example, one device set at "5" may deliver 30 mL of oxygen per pulse, while another device delivers 66 mL of oxygen per pulse. That's over double the pulse volume of the first device, yet both are set to the same setting of "5".

The purpose of the chart on the following pages is to have the most basic information about POCs assembled in one place. It is hoped that anyone interested in a POC can use this information chart as a starting point in their quest to find the POC that is "right" for them or someone they know. The ability of the unit to oxygenate the user during all of their daily activities should be the first priority when selecting a POC – if the unit cannot provide enough oxygen to meet someone's daily oxygen needs, they should look elsewhere. It is highly recommended that anyone wanting to buy a POC find a provider or manufacturer that will allow them to "test drive" the unit before purchasing – no one wants to spend a considerable amount of money on a product that does not perform to their expectations.

Every attempt has been made to accurately represent the individual products' abilities as found in the respective manufacturer's product literature (manuals, specifications, official product websites). No guarantees are made toward the accuracy of the information provided. Manufacturer specifications are often stated under ideal conditions. Always refer to the manufacturer's recommendations for use. Please consult

with your primary caregiver(s) to discuss whether a portable oxygen concentrator may be an option for you. If you have any questions about the information provided, or if you find an error, please do not hesitate to contact me at the email address below.

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2013: Portable Oxygen Concentrators

Note: Please consult with your doctor or therapist before deciding to use or purchase any of these devices.

Intermittent Flow POCs (IF POCs)




Unit Name	Available Settings	Pulse Dose Type	Maximum Dose per Breath	Unit & Battery (Approx.)	Unit w/Accessories (Approx.)	Battery Time at Pulse Setting 2 (Approx.)	Battery Charge Time (Approx.) (Unit Off)	(Approved) Maximum Altitude
 AirSep® Focus	None selectable	Minute Vol. Delivery: Dose decreases as rate rises	15 BPM: 22 mL 30 BPM: 11 mL	2 lbs.	Add 2–5 lbs.	1.5 hours	4 hours	10,000 ft
 AirSep® FreeStyle 3™	1 to 3	Minute Vol. Delivery: Dose decreases as rate rises	15 BPM: 33 mL 30 BPM: 16 mL	4 lbs.	Add 2–5 lbs.	2.5 hours	3.5 hours	12,000 ft
 AirSep® FreeStyle 5™	1 to 5	Minute Vol. Delivery: Dose decreases as rate rises	15 BPM: 66 mL 30 BPM: 33 mL	6 lbs.	Add 2–5 lbs.	2 hours	3.25 hours	12,000 ft
 Inogen One® G2	1 to 5	Minute Vol. Delivery: Dose decreases as rate rises	15 BPM: 60 mL 30 BPM: 30 mL	7 lbs.	Add 2–5 lbs.	3 hours	4 hours	10,000 ft
 Inogen One® G3	1 to 4	Minute Vol. Delivery: Dose decreases as rate rises	15 BPM: 56 mL 30 BPM: 28 mL	5 lbs.	Add 2–5 lbs.	3 hours	4 hours	10,000 ft
 Inova Labs Life Choice®	1 to 3	Fixed Delivery: 1) 10 mL 2) 20 mL 3) 30 mL	30 mL	5 lbs.	Add 2–5 lbs.	2 hours	4 hours	10,000 ft
 Inova Labs Activox®	1 to 3	Fixed Delivery: 1) 10 mL 2) 20 mL 3) 30 mL	30 mL	5 lbs.	Add 2–5 lbs.	6 hours	4 hours	10,000 ft
 Invacare XP®	1 to 5	Minute Vol. Delivery: Dose decreases as rate rises	15 BPM: 56 mL 30 BPM: 28 mL	6 lbs.	Add 2–5 lbs.	2.5 hours	4 hours	10,000 ft
 Lumes®***								

* The Eclipse 3 also has pulse settings of 128, 160 and 192 mL, but has additional restrictions for use. See Eclipse 3 manual for more information.






** The SimplyGo has (2) IF delivery modes: Pulse Mode and Night Mode. Shown volumes are for Pulse Mode. Night Mode has minute volume delivery.

*** Approximate Continuous Flow volumes at 2 LPM and 4 LPM are provided for comparison to maximum volumes delivered by selected POC.

Intermittent Flow POCs (IF POCs)

Unit Name	Available Settings	Pulse Dose Type	Maximum Dose per Breath	Unit & Battery (Approx.)	Unit w/Accessories (Approx.)	Battery Time at Pulse Setting 2 (Approx.)	Battery Charge Time (Approx.) (Unit Off)	(Approved) Maximum Altitude
Oxus 	1 to 5	Fixed Delivery: 9 mL per setting	43 mL	10 lbs.	Add 2–5 lbs.	3 hours	3 hours	8,000 ft
Precision EasyPulse 	1 to 5	Minute Vol. Delivery: Dose decreases as rate rises	15 BPM: 52 mL 30 BPM: 26 mL	7 lbs.	Add 2–5 lbs.	3 hours	4 hours	9,000 ft
Respironics EverGo 	1 to 6	Combination Fixed/Minute Vol. Delivery	15 BPM: 70 mL 30 BPM: 35 mL	9 lbs.	Add 2–5 lbs.	4 hours	2 hours	8,000 ft

Continuous Flow POCs (CF POCs)

DeVilbiss iGo® 	Pulse: 1 to 6 Continuous: 1 to 3	Fixed Delivery: 16 mL per setting	96 mL	19 lbs.	Add 5–10 lbs.	4.5 hours	3 hours	13,123 ft
Invacare® Solo2 	Pulse: 1 to 6 Continuous: 0.5 to 3	Minute Vol. Delivery: Dose decreases as rate rises	15 BPM: 133 mL 30 BPM: 66 mL	<20 lbs.	Add 5–10 lbs.	3.5 hours	5 hours	10,000 ft
O₂ Concepts OxLife Independence 	Pulse: 1 to 6 Continuous: 1 to 3	Fixed Delivery: 16 mL per setting	96 mL	18 lbs.	Add 5–10 lbs.	3 hours	4 hours	13,123 ft
Respironics SimplyGo 	Pulse: 1 to 6 Continuous: 0.5 to 2	Combination Fixed/Minute Vol. Delivery**	15 BPM: 72 mL 30 BPM: 66 mL	10 lbs.	Add 2–5 lbs.	3 hours	2.5 hours	10,000 ft
SeQual® Eclipse 3™ 	Pulse: 1 to 6* Continuous: 0.5 to 3	Fixed Delivery: 16 mL per setting	96 mL*	18 lbs.	Add 5–10 lbs.	5 hours	3 hours	13,123 ft

Dose Volumes*: 2 LPM Continuous Flow Volume per Breath–15 BPM: 44 mL, 30 BPM: 22mL
4 LPM Continuous Flow Volume per Breath–15 BPM: 88 mL, 30 BPM, 44 mL**

Calling Dr. Bauer ...



Dr. Michael Bauer

Oximeter Facts

Oxygen is carried in the blood on hemoglobin. A pulse oximeter calculates the percentage of oxygen that is attached to the hemoglobin with an accuracy between 1% and 3%.

Factors that can affect readings:

- Poor circulation to the hands
- Excessive motion
- Blue or green nail polish
- Weak or irregular pulse
- Pressure on the sensor
- A saturation level below 70%

Dear Dr. Bauer,

Why is it that I feel so short of breath when my oximeter is reading in the low 90s? It's confusing.

Dana A., Ormond Beach, FL

Many of my patients with advanced lung disease have asked me why they are still so short of breath even when their oxygen level's in an acceptable range of 90% or better. There are complex reasons for this. It is true that low oxygen levels (below 88%) can be a strong signal to the brain to make us sense air hunger and dyspnea (the medical term for short of breath). Many additional factors also result in the sensation of dyspnea.

We lung doctors often check pulmonary function tests. We typically measure the Vital Capacity (how much air from the beginning to the end of a breath) and the FEV1 (how much air you can forcefully exhale in one second). Even when your oxygen level is good, when these numbers are low, the body senses dyspnea. The respiratory muscles need to work in overdrive and the brain just gets that feeling of "I'm not getting enough air". This is why inhalers can be so effective in improving breathing symptoms. They often immediately improve the Vital Capacity and FEV1.

Patients with lung disease are often just not physically fit. This situation comes hand in hand with medical illness as well as advancing age. Walking up the stairs or vacuuming is likely to cause shortness of breath in anyone who has not been used to exercise or is overweight. Exercising and pulmonary rehabilitation are the key here.

Low blood counts (anemia), heart disease (congestive heart failure or irregular heart rhythms) and advanced kidney disease are common conditions that may cause shortness of breath even when lungs are working well. Your doctor tries to make sure all these situations are optimally treated.

